

Claims

1.A method of carrying out a broadcast/multicast service provided via a channel of a mobile communication system, the method comprising steps of:

receiving a flow identifier indicative of the broadcast/multicast service; and

generating, based on the received flow identifier, a public long code mask for the channel providing the broadcast/multicast service.

2.The method as claimed in claim 1, wherein the channel for the broadcast/multicast service is a shared channel.

3.The method as claimed in claim 2, wherein the shared channel is one of a forward broadcasting fundamental channel and a forward broadcasting supplemental channel.

4.The method as claimed in claim 1, wherein the generated public long code mask includes a specific header for the broadcast/multicast service.

5.The method as claimed in claim 4, wherein the specific header has a value that does not coincide with previous public long code masks and does not coincide with previous long code masks.

6.The method as claimed in claim 5, wherein the value of the specific header is set to one of "1100010000" and "1100010001."

7.The method as claimed in claim 6, wherein the value of the specific header is "1100010000" when the channel is a forward broadcasting fundamental channel

8.The method as claimed in claim 6, wherein the value of the specific header is "1100010001" when the channel is a forward broadcasting supplementary channel

9.The method as claimed in claim 4, wherein the generated public long code mask has a length of 42 bits.

10. The method as claimed in claim 9, wherein the specific header has a length of ten bits.

11. The method as claimed in claim 9, wherein the flow identifier has a length selected from the group consisting of 16 bits, 24 bits, and 32 bits.

12. The method as claimed in claim 11, wherein, if the length of the flow identifier is not 32 bits, the public long code mask is padded to fill remaining bits.

13. The method as claimed in claim 1, wherein the public long code mask is shared by all mobile terminals provided with the broadcast/multicast service.

14. The method as claimed in claim 1, wherein the generated public long code mask has a length of 42 bits, said generating step comprising a step of:

allocating ten upper bits to a specific header, the specific header having a value that does not coincide with previous public long code masks and does not coincide with previous long code masks,

wherein the flow identifier occupies a predetermined length of unallocated bits of the generated public long code mask.

15. The method as claimed in claim 14, wherein the value of the specific header is set to one of "1100010000" and "1100010001."

16. The method as claimed in claim 15, wherein the value of the specific header is "1100010000" when the channel is a forward broadcasting fundamental channel

17. The method as claimed in claim 15, wherein the value of the specific header is "1100010001" when the channel is a forward broadcasting supplementary channel

18. The method as claimed in claim 14, wherein the flow identifier has a length selected from the group consisting of 16 bits, 24 bits, and 32 bits.

19. The method as claimed in claim 18, wherein, if the length of the flow identifier is not 32 bits, the public long code mask is padded to fill a remainder of the 42 bits, the remainder excluding the specific header allocation and the predetermined length occupied by the flow identifier.

20. The method as claimed in claim 19, wherein the padded bits are all lower-order bits.

21. A method of providing a broadcast/multicast service provided in a mobile communication system, the method comprising steps of:

assigning a forward channel to a broadcast/multicast service;

generating a flow identifier of the broadcast/multicast service; and

generating, based on the generated flow identifier, a public long code mask for the assigned forward channel.

22. The method as claimed in claim 21, further comprising a step of providing the generated flow identifier to each of a plurality of mobile terminals.

23. The method as claimed in claim 22, wherein said flow identifier providing step is carried out prior to said forward channel assigning step.

24. The method as claimed in claim 21, wherein the generated public long code mask is shared by a plurality of mobile terminals among a service group to be provided with the broadcast/multicast service.

25. The method as claimed in claim 21, wherein the forward channel is shared by a plurality of mobile terminals among a service group to be provided with the broadcast/multicast service.

26. The method as claimed in claim 25, wherein the shared forward channel is one of a forward broadcasting fundamental channel and a forward broadcasting supplemental channel.

27. The method as claimed in claim 22, wherein the generated public long code mask has a length of 42 bits, said public long code mask generating step comprising a step of:

allocating ten upper bits to a specific header, the specific header having a value that does not coincide with previous public long code masks and does not coincide with previous long code masks,

wherein the flow identifier occupies a predetermined length of unallocated bits of the generated public long code mask.

28. The method as claimed in claim 27, wherein the value of the specific header is set to one of "1100010000" and "1100010001."

29. The method as claimed in claim 28, wherein the value of the specific header is "1100010000" when the channel is a forward broadcasting fundamental channel

30. The method as claimed in claim 28, wherein the value of the specific header is "1100010001" when the channel is a forward broadcasting supplementary channel

31. The method as claimed in claim 27, wherein the flow identifier has a length selected from the group consisting of 16 bits, 24 bits, and 32 bits.

32. The method as claimed in claim 27, wherein the flow identifier for the broadcast/multicast service occupies a BCMC\_FLOW\_ID field.

33. The method as claimed in claim 31, wherein, if the length of the flow identifier is not 32 bits, the public long code mask is padded to fill a remainder of the 42 bits, the

remainder excluding the specific header allocation and the predetermined length occupied by the flow identifier.

34. The method as claimed in claim 33, wherein the padded bits are all lower-order bits.

35. A method of carrying out a broadcast/multicast service provided via a channel of a mobile communication system, the method comprising steps of:

generating, based on a flow identifier indicative of a broadcast/multicast service, a public long code mask for the channel providing the broadcast/multicast service;

multiplexing the generated public long code mask with a transmission signal; and

transmitting the multiplexed signal.

36. The method as claimed in claim 35, wherein the flow identifier is assigned to the broadcast/multicast service prior to providing the broadcast/multicast service.

37. A method of carrying out a broadcast/multicast service provided via a channel of a mobile communication system, the method comprising steps of:

generating, based on a flow identifier indicative of a broadcast/multicast service, a public long code mask for the channel providing the broadcast/multicast service;

multiplexing the generated public long code mask with a received signal; and

decoding the multiplexed signal.

38. The method as claimed in claim 37, wherein the flow identifier is assigned to the broadcast/multicast service prior to providing the broadcast/multicast service.

39. A method of simultaneously receiving a plurality of broadcast/multicast services via a forward channel of a mobile communication system, the method comprising steps of:

receiving a plurality of flow identifiers respectively indicative of the plurality of broadcast/multicast services;

selecting one of the received flow identifiers; and

generating, based on the selected flow identifier, a public long code mask for the forward channel.

40. The method as claimed in claim 39, wherein the forward channel is a forward broadcast supplemental channel.

41. The method as claimed in claim 39, wherein the selected flow identifier is a first broadcast/multicast service flow identifier allocated to the forward channel.

42. A method of receiving a broadcast/multicast service simultaneously via a plurality of forward broadcast



supplemental channels of a mobile communication system, the method comprising steps of:

receiving a flow identifier indicative of the broadcast/multicast service; and

generating a public long code mask, using the received flow identifier and a predetermined portion of a channel identifier for identifying the corresponding forward broadcast supplemental channel.

43. The method as claimed in claim 42, wherein the public long code mask has a length of 42 bits.

44. The method as claimed in claim 42, wherein the flow identifier has a length of 32 bits.

45. The method as claimed in claim 42, wherein the channel identifier includes a maximum of seven bits.

46. The method as claimed in claim 45, wherein the predetermined portion is the four least significant bits of the channel identifier.

47. The method as claimed in claim 45, wherein the predetermined portion is the three least significant bits of the channel identifier.

48. The method as claimed in claim 42, wherein the public long code mask comprises a specific header occupying a most significant bit portion of the public long code mask.

49. The method as claimed in claim 48, wherein the channel identifier and the service flow identifier are arranged from a least significant bit to a more significant bit, respectively.

50. The method as claimed in claim 48, wherein a length of the header is variable according to a length of the channel identifier.

51. The method as claimed in claim 50, wherein, if the predetermined portion of the channel identifier is less than  $n$  bits, where  $n < 7$ , the header has a length of  $10 - n$  bits.

52. The method as claimed in claim 42, wherein the header has a length of seven bits, corresponding to one of 1100001, 1100010, and 1100011.

53. The method as claimed in claim 42, wherein the header has a length of six bits, corresponding to one of 110001 and 00xxxx.

54. The method as claimed in claim 42, wherein, if the channel identifier comprises seven bits, the header is selected from the group consisting of 110, 000, and 001.

55. The method as claimed in claim 48, wherein, if the flow identifier has a length less than 32 bits, the flow identifier is padded from a most significant bit adjacent the header.

56. The method as claimed in claim 55, wherein, if the flow identifier and the header have lengths of 16 bits and 7 bits, respectively, the flow identifier is padded with twelve bits from the most significant bit adjacent the header.

57. The method as claimed in claim 55, wherein, if the flow identifier and the header have lengths of 24 bits and 7 bits, respectively, the flow identifier is padded with four bits from the most significant bit adjacent the header.

58. The method as claimed in claim 55, wherein, if the flow identifier and the header have lengths of 32 bits and 3 bits, respectively, the flow identifier is not padded.

59. In a mobile communication system receiving one broadcast/multicast service data flow separated into at least two data flows via at least two forward broadcast supplemental

channels, a public long code mask generating method comprising steps of:

receiving a flow identifier for identifying the broadcast/multicast service; and

generating a public long code mask using a first flow identifier allocated to each of the channels and a specific service flow identifier for identifying a specific broadcast/multicast service data flow within the respective forward broadcast supplemental channels.

60. The method as claimed in claim 59, wherein the public long code mask is generated using the first service flow identifier, a first specific service flow identifier corresponding to the first specific service data flow, and a specific header.

61. The method as claimed in claim 60, wherein the public long code mask has a length of 42 bits.

62. The method as claimed in claim 60, wherein the specific header has a value that does not coincide with previous public long code masks and does not coincide with previous long code masks.

63. The method as claimed in claim 62, wherein the value of the specific header is selected from the group consisting of 1100011, 1100001, and 1100010.

64. The method as claimed in claim 59, wherein the first specific service flow identifier has a length of three bits.

65. The method as claimed in claim 59, wherein the first specific service flow identifier constructs lower bits of the public long code mask.

66. In a mobile communication system receiving one broadcast/multicast service data flow separated into at least two data flows via at least two forward broadcast supplemental channels, a public long code mask generating method comprising steps of:

receiving a first broadcast/multicast service flow identifier allocated to the corresponding forward broadcast supplemental channel; and

generating a public long code mask using a channel identifier identifying the corresponding forward broadcast supplemental channel and a first specific service flow identifier corresponding to the first broadcast/multicast service flow identifier in the corresponding forward broadcast supplemental channel, wherein the specific service flow identifier identifies a specific broadcast/multicast service data flow in each of the corresponding forward broadcast supplemental channels.

67. The method as claimed in claim 66, wherein the public long code mask is generated using the channel identifier, the first specific service flow identifier, and a specific header.

68. The method as claimed in claim 67, wherein the public long code mask has a length of 42 bits.

69. The method as claimed in claim 67, wherein the channel identifier and the first specific service flow identifier have lengths of seven bits and three bits, respectively.

70. The method as claimed in claim 69, wherein, if the specific header has a length of  $n$  bits, the public long code mask is padded by as many as  $32-n$  bits.

71. In a network multiplexing to transmit data flows of at least two broadcast/multicast services via one forward channel, a public long code mask generating method comprising steps of:

generating flow identifiers for identifying the at least two broadcast/multicast services, respectively;

selecting one of the generated at least two flow identifiers; and

generating a public long code mask using the selected flow identifier.

72. The method as claimed in claim 71, wherein the selected flow identifier indicates a first broadcast/multicast service allocated to the corresponding forward channel.

73. In a network transmitting one broadcast/multicast service data flow via at least two forward broadcast supplemental channels, a public long code mask generating method comprising steps of:

generating a flow identifier for identifying a corresponding broadcast/multicast service; and

generating a public long code mask using the generated flow identifier and a predetermined portion of a channel identifier for identifying the corresponding forward broadcast supplemental channel.

74. The method as claimed in claim 73, wherein the selected flow identifier indicates a first broadcast/multicast service allocated to the corresponding forward channel.

75. In a network transmitting one broadcast/multicast service data flow via at least two forward broadcast supplemental channels, a public long code mask generating method comprising steps of:

generating a flow identifier for identifying a corresponding broadcast/multicast service; and

generating a public long code mask using the generated flow identifier and a specific service flow identifier for identifying a specific broadcast/multicast service data flow within the corresponding forward broadcast supplemental channel.

76. The method as claimed in claim 75, wherein the flow identifier indicates a first broadcast/multicast service allocated to the corresponding forward broadcast supplemental channel and wherein the specific service flow identifier indicates a specific data flow of the first broadcast/multicast service.

77. In a network transmitting at least two separated data flows of one broadcast/multicast service via at least two forward broadcast supplemental channels, a public long code mask generating method comprising steps of:

generating a flow identifier for identifying the broadcast/multicast service; and

generating a public long code mask using a channel identifier for identifying each of the corresponding forward broadcast supplemental channels and a specific service flow identifier for identifying a specific data flow within each of the corresponding forward broadcast supplemental channels.

78. The method as claimed in claim 77, wherein the generated flow identifier indicates a first broadcast/



multicast service allocated to the corresponding forward broadcast supplemental channel.

79. A mobile terminal comprising:

a first module for receiving and storing a flow identifier for a broadcast/multicast service; and

a second module for generating a public long code mask to be used in a channel for the broadcast/multicast service upon providing the broadcast/multicast service using the flow identifier for the broadcast/multicast service.

80. A base station comprising:

a first module for assigning one forward channel to one broadcast/multicast service, the first module generating a flow identifier of the broadcast/multicast service; and

a second module for generating a public long code mask for the assigned forward channel using the generated flow identifier upon providing the broadcast/multicast service.

81. In a communication system receiving a data flow for each of at least two multiplexed broadcast/multicast services via one forward channel, a mobile terminal comprising:

a first module for receiving flow identifiers for respectively identifying the at least two broadcast/multicast services;

a second module for selecting one of the received flow identifiers; and

a third module for generating a public long code mask using the selected flow identifier.

82. The mobile terminal as claimed in claim 81, wherein the forward channel is a forward broadcast supplemental channel.

83. The mobile terminal as claimed in claim 81, wherein the selected flow identifier is a first broadcast/multicast service flow identifier allocated to the forward broadcast supplemental channel.

84. In a communication system separately receiving at least two data flows of one broadcast/multicast service via at least two forward broadcast supplemental channels, a mobile terminal comprising:

a first module for receiving a flow identifier for identifying the broadcast/multicast service; and

a second module for generating a public long code mask using the received flow identifier and a predetermined portion of a channel identifier for identifying the corresponding forward broadcast supplemental channel.

85. In a communication system separately receiving at least two data flows of one broadcast/multicast service via at least two forward broadcast supplemental channels, a mobile terminal comprising:

a first module for receiving a flow identifier for identifying the broadcast/multicast service; and

a second module for generating a public long code mask using a first flow identifier allocated to each of the at least two forward broadcast supplemental channels and a specific service flow identifier for identifying a specific broadcast/multicast service data flow within each of the forward broadcast supplemental channels.

86. In a communication system separately receiving at least two data flows of one broadcast/multicast service via at least two forward broadcast supplemental channels, a mobile terminal comprising:

a first module for receiving a first broadcast/multicast service flow identifier allocated to the corresponding forward broadcast supplemental channel; and

a second module for generating a public long code mask using a channel identifier for identifying the corresponding forward broadcast supplemental channel and a first specific service flow identifier corresponding to the first broadcast/multicast service flow identifier within the corresponding forward broadcast supplemental channel, wherein the specific service flow identifier identifies a specific broadcast/multicast service data flow in each of the corresponding forward broadcast supplemental channels.